Space Weather Forecast

Issued on Sunday, 29 October 2023 at 13:24 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Minor Geomagnetic Storms expected 29 Oct with a chance G2 Moderate Storm intervals. Risk decreasing 30 Oct onward.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: Low, with a series of common class flares from a developing and increasingly complex region in the southeast quadrant. There are three further small and relatively stable region on the visible disc. No Earth-directed CMEs have been observed.

Solar Wind / Geomagnetic Activity: Solar wind speeds have steadily increased to strong levels due to the influence of a fast solar wind. Total magnetic field strength was initially moderate, but has declined to weak levels with the north-south component also generally varying weakly. Geomagnetic activity has been generally Unsettled to Active, with two G1/Minor storm intervals.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary
Solar Activity: Low or Very Low solar activity is expected, mainly from AR3474. There is a very slight chance of Moderate class flares.

Solar Wind / Geomagnetic Activity: There are no Earth directed CMEs. A fast solar wind is currently connected to the Earth, giving solar wind speeds of 600-650 km/s. Speeds are expected to peak on 29 Oct, perhaps reaching 700 km/s before declining through the period. Unsettled to G1/Minor Storm activity is expected 29 Oct with a chance of an isolated G2/Moderate storm interval. Activity then easing through the period, with a chance of G1/Minor storms on 30 Oct, gradually reaching Quiet with isolated Unsettled intervals by 01 Nov.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to persist at background with no solar radiation storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Met Office

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	Yes	80	40	20	1
Strong	G3	No	5	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	10	15	25
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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